

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR PARTICIPATION IN AUTOIMMUNE DISEASE

INVENTORS NAME: Henrik Ditzel et al.

SERIAL NO.: 09/828,708

1/21

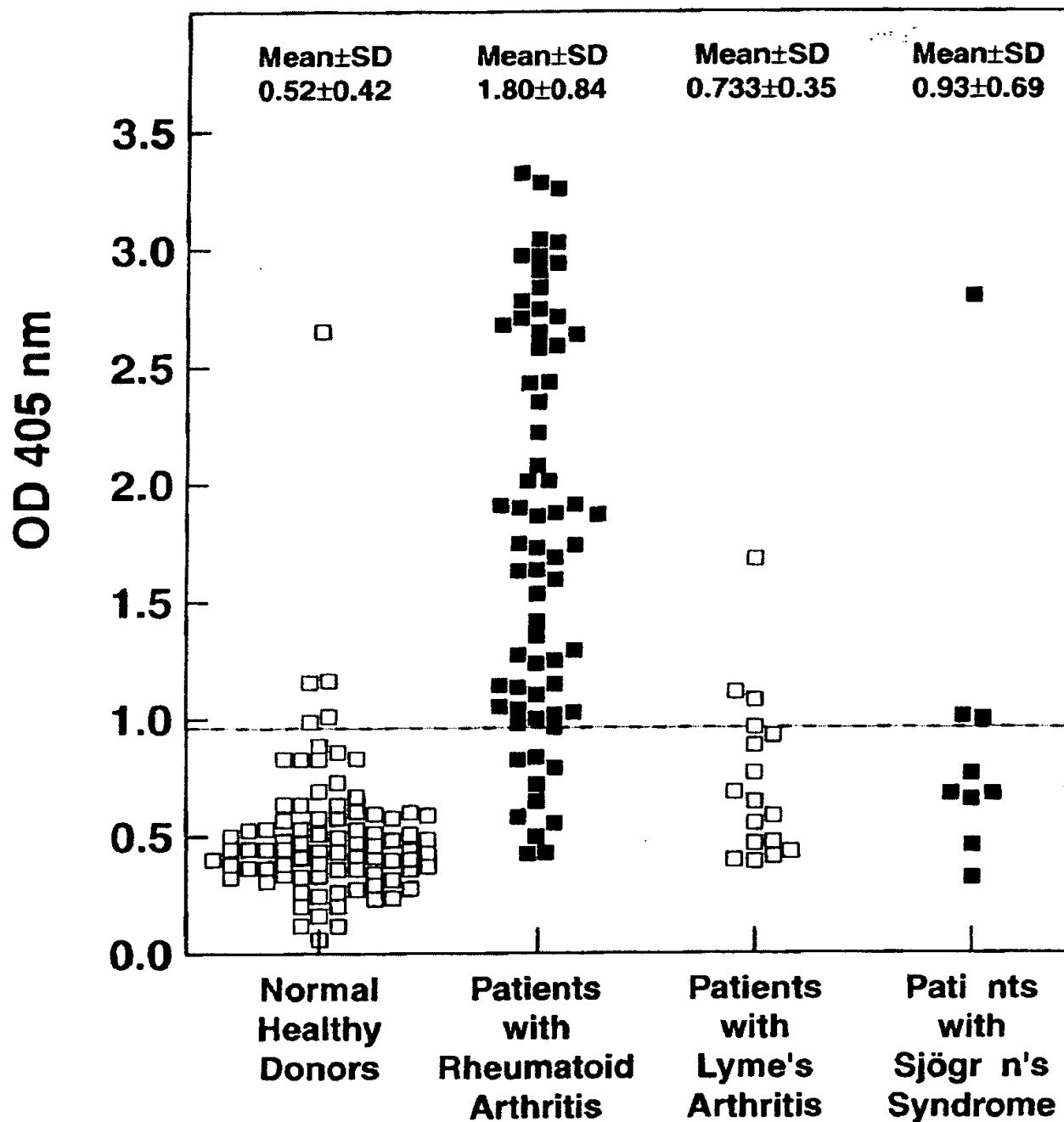


FIG. 1A

not ref

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR  
PARTICIPATION IN AUTOIMMUNE DISEASE  
INVENTORS NAME: Henrik Ditzel et al.  
SERIAL NO.: 09/828,708  
2/21

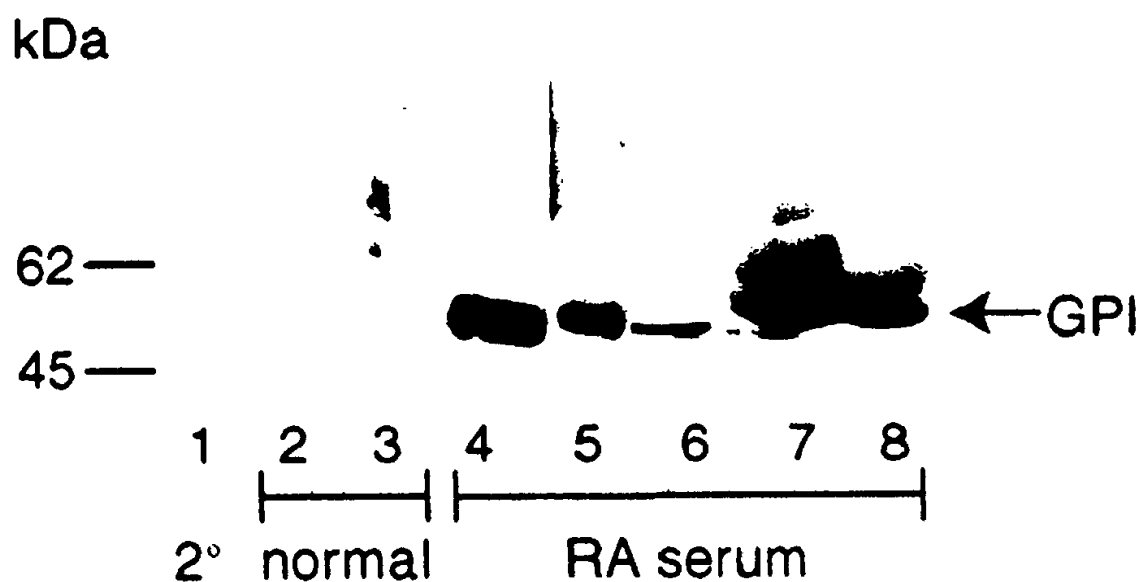


FIG. 1B

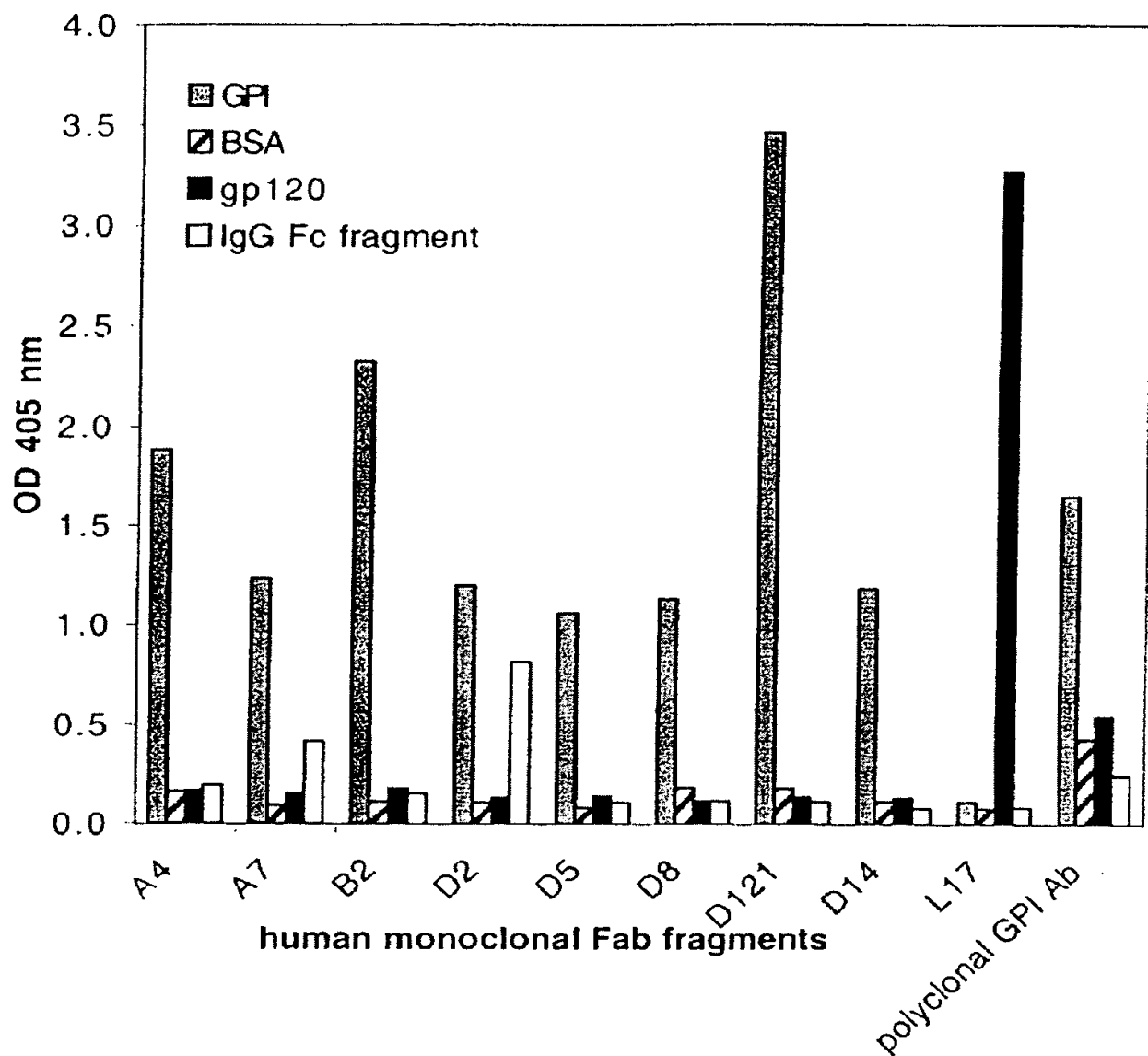


FIG. 2

4/21

Light Chain Variable AA Sequences

<u>Name</u>	<u>SEQ ID</u> <u>NO.</u>	<u>FR1</u>	<u>CDR1</u>	<u>FR2</u>
A4	1	PDSLAVSLGERATINC	KSSQSVFYTSNNKNYLA	WYQQKPGQPPKLLIY
D2	2	PSFLSASVGDRVTITC	RASQGISSYLA	WYQLKPGKAPKLLIY
D121	3	PGTSLSPGERATLSC	RASQSVSSSYLA	WYQQKPGQAPRLLIY
B2	4	PDSLAVSLGERATINC	KSSQSVFYTSNNKNYLA	WYQQKPGQPPKLLIY
D14	5	PGTSLSPGEGATLSC	RASQSVSSSYLA	WYQQRPGQAPRLLIY
D5	6	PGTSLSPGEGATLSC	RASQSVSSSYLA	WYQQKPGQAPRLLIY
A7	7	PGTSLSPGERVTLSC	RASQSVSSSYLA	WYQQKPGQAPRLLIY
<u>Name</u> <u>cont'd</u>	<u>CDR2</u>	<u>FR3</u>	<u>CDR3</u>	<u>FR4</u>
A4	WASTRES	GVPDRFSGSGGTDFLTISLQAEDVAVYYC	QQYYDSYT	FGQGTKLEIKRTVA
D2	AATLQS	GVPSRFSGSGGTDFLTISLQPEDFATYYC	QQLNSYPLT	FGGGAKEGIRRTVA
D121	GASSRAT	GIPDRFSGSGGTDFLTISRLEPEDFAVYYC	QQYGSSPRT	FGQGTKVEIKRTVA
B2	WASTRES	GVPDRFSGSGGTDFLTISLQAEDVAVYYC	QQYYDSYT	FGQGTKLEIKRTVA
D14	GASSRAT	GIPDRFSGSGGTDFLTISRLEPEDTGTYC	QQYDNVPDT	FGQGTREIKRTVA
D5	GASSRAT	GIPDRFSGSGGTDFLTISRLEPEDFAVYYC	QQYGTSL	FGQGTREIKRTVA
A7	GASSRAT	GIPDRFSGSGGTDFLTISRLEPEDFAVYYC	QQYGSSPRT	FGQGTKVEIKRTVA

FIG. 3AL

5/21

Heavy Chain Variable AA Sequences

Name	SEQ ID NO.	FR1	CDR1	FR2	CDR2	FR4	VH gene
A4	8	GGGVVQPGRSLKLSCAASGFTFS	SHGSH	WVRQAPGKGLEWVA	LLSSDGSNKFYIESVKG		
D2	9	.....AW..LR...V.....	..TM.	.....	..TM.	WGQGTTLVTVSS	VH3
D121	10	.....R.....	.YTF.	.....	VI.Y..NK.Y.AD....	.....	VH3
B2	11	GAEVRKPGTSVRISCRASGNTFT	GHHIH	WVRQAPGQGLQWMG	RINPTGGVSLAQSFQD		
D14	12	GGGLVQPGGSLRLSCATSGFIFN	SYAMN	WVRQAPGKGLEWVS	RISGNSGSTFYADSVKG		
D5	13	GPGLVRPSQTLTLTCVPVSPGSIK	GDSYFWS	WVRQPVGKGLEWIG	RIYGRGTTNYNRVFGS		
A7	14	GAEVKKPGSSVKVSCRASGGTFS	RYAIS	WVRQAPGQGLEWMG	GIIPFPGPVNYAQKFQ		
A4		RFTISKDNSKNTLYLQMNSLRIDDTAVYYCAI	SLVGTTAFNY				
D2		.....R.....LS...PE.....TN	.E..A...D.			WGQGTTLVTVSS	VH3
D121		.....VE.....	.I.....			.....	VH3
B2		RVSLTRDRSSNTVFLELSGLTEEDTALYFCAR	PRFNMIREFLDL			WGQGTVVTVSS	VH1
D14		RFTISRDNKNTAFLRMNSQRAEDTAVYYCAK	DLSSGAYYYGMDV			WGQGTTLVTVSS	VH3
D5		RVSMVSVDMSRSQFFLELRDVTAAADTAVYYCAR	DKGSEYSYFDP			WGQGIVVNVFS	VH4
A7		RVTITADDSTNTAYMGLSSLRSRGGDTAVYYCAR	VAYDGSYYNNIPKIYYYSYND			WGKGTTLVTVSS	VH1

FIG. 3AH

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR  
 PARTICIPATION IN AUTOIMMUNE DISEASE  
 INVENTORS NAME: Henrik Ditzel et al.  
 SERIAL NO.: 09/828,708

6/21

Name	SEQ ID NO:	FR1	CDR1	FR2	CDR2
A4	8	GGGVVQPGRSRLKLSCAASGFTFS	SHGSH	WVRQAPGKGLEWVA	LLSSDGSNKFYIESVKG
D2	9	.....AW..LR...V.....	...TM.		...TM.
D121	10	.....R.....	.YTF.		VI.Y..NK.Y.AD....
DP-46		.....R.....	.YAM.		VI.Y.....AD....
B2	11	GAEVRKPGTTSVRISCRASGNTFT	GHHIH	WVRQAPGQGLQWVG	RINPTGGGVSLAQSFQD
DP-7		....K...A..KV..K...Y...	SYMH	.....E...	I...S...ST.Y..K..G
D14	12	GGGLVQPGGSLRLSCATSGFIFN	SYAMN	WVRQAPGKGLEWVS	RISGNSGSTFYADSVKG
VH26		.....A...T.S	....S		A...SG...Y.....
D5	13	GPGLVVRPSQTLTLTCPVSPGSIK	GDSYFWS	WVRQPVGKGLEWIG	RIYGRGTTNYNRVFGS
IGHCAK		....K.....T..G...S	SG..Y..	.I...A.....	...TS.S....PSLK.
A7	14	GAEVKKPGSSVKVSCRASGGTFS	RYAIS	WVRQAPGQGLEWVG	GIIPPFPGPVNYAQKFQG
VH1-69		.....K.....	S....	.....	....I..TA.....

FIG. 3B

7/21

Name cont'd	FR3	CDR3	FR4	VH gene
A4	RFTISKDNSKNTLYLQMNSLRIDDTAVYYCAI	SLVGTAFNY	WGQGTLLVTVSS	VH3
D2	....R.....LS...PE.....TN	.E..A...D.	.....	VH3
D121	.....VE.....	.I.....		VH3
DP-46	....R.....AE.....R			
B2	RVSLTRDRSSNTVFLELSGLTEEDTALYFCAR	PRFNMIREPLDL	WGQGTVVTVSS	VH1
DP-7	..TM...T.TS..YM...S.RS....V.Y...			
D14	RFTISRDN SKNTAFLRMNSQRAEDTAVYYCAK	DLSSGAYYYYGM	WGQGTTVTVSS	VH3
VH26	.....LY.Q...L.....	DV		
D5	RVSM SVDMRSRQFFLELRDVTADTAVYYCAR	DKGSEYSYFDP	WGQGIVVNVFS	VH4
IGHCAK	..TI...T.KN..S.K.SS.....			
A7	RVTITADDSTNTAYMGLSSLRSGDTAVYYCAR	VAYDGSYYNNI	WGKGTTVTVSS	VH1
VH1-69	.....K..S....E.....E.....	PKIYYYSYMDV		

FIG. 3B Cont'd

8/21

Clone	Closest Germline	% amino acid homology	% nucleotide homology	R/S ratio FRs	R/S ratio CDRs
A4	DP-46	86	89	6/6:1.0	12/5:2.4
D2	DP-46	87	92	8/6:1.3	4/5:0.8
D121	DP-46	91	95	2/4:0.5	7/0:>7.0
B2	DP-7	67	79	20/17:1.2	<u>14/5:2.8</u>
D14	VH26	87	93	7/3:2.3	5/2:2.5
D5	IGHCAK	73	81	17/16:1.1	13/4:3.3
A7	VH1-69	90	94	7/2:3.5	5/0:>5.0

FIG. 3C



9/21

CDR's Heavy Chain

SEQ ID	CDR1	SEQ ID NO:	CDR2	SEQ ID NO:	CDR3
15	SHGSH	22	LLSSDGSNKFYIESVKG	29	SLVGTAFNY
16	..TM.	23	.IFY.....Y.AD....	30	.E..A...D.
17	.YTF.	24	VI.Y..NK.Y.AD....	31	.I.....
18	GHHIH	25	RINPTGGGVSLAQSFQD	32	PRFNMIREPLDL
19	SYAMN	26	RISGNSGSTFYADSVKG	33	DLSSGAYYYYGMDV
20	GDSYFWS	27	RIYGRGTTNYNRVFGS	34	DKGSEYSYFDP
21	RYAIS	28	GIIPFPGPVNYAQKFQG	35	VAYDGSYYNNIPKIYYYSYMDV

CDR's Light Chain

SEQ ID	CDR1	SEQ ID NO:	CDR2	SEQ ID NO:	CDR3
36	KSSQSVFYTSNNKNYLA	43	WASTRES	50	QQYYDSYT
37	RASQGISSYLA	44	AASTLQS	51	QQLNSYPLT
38	RASQSVSSSYLA	45	GASSRAT	52	QQYGSSPRT
39	KSSQSVFYTSNNKNYLA	46	WASTRES	53	QQYYDSYT
40	RASQSVSSSYLA	47	GASSRAT	54	QQYDNVPDT
41	RASQSVSSSYLA	48	GASSRAT	55	QQYGTSP
42	RASQSVSSSYLA	49	GASSRAT	56	QQYGSSPRT

FIG. 4A

10/21

Framework Regions, Heavy Chain

SEQ ID	FR1	SEQ ID	FR2
NO:		NO:	
57	GGGVVQPGRSLKLSAASGFTFS	64	WVRQAPGKGLEWVA
58	.....AW..LR...V.....	64	.....
59	.....R.....	64	.....
60	GAEVKPGTSVRISCRASGNTFT	65	WVRQAPGQGLQWMG
61	GGGLVQPGGSLRLSCATSGFIFN	66	WVRQAPGKGLEWVS
62	GPGLVRPSQTLSLTCPVSPGSIK	67	WVRQPVGKGLEWIG
63	GAEVKKPGSSVKVSCRASGGTFS	68	WVRQAPGQGLEWMG
SEQ ID	FR3	SEQ ID	FR4
NO:		NO:	
69	RFTISKDNSKNTLYLQMNLSLRIDDTAVYYCAI	76	WGQGTLLTVVSS
70	.....R.....LS...PE.....TN	76	.....
71	.....VE.....	76	.....
72	RVSLTRDRSSNTVFLELSGLTEEDTALYFCAR	77	WGQGTVVTVVSS
73	RFTISRDNKNTAFLRMNSQRAEDTAVYYCAK	78	WGQGTTVTVVSS
74	RVSMVSVMRSRQFFLELRDVTAAADTAVYYCAR	79	WGQGI VVNVS
75	RVTITADDSTNTAYMGLSSLRSRSGDTAVYYCAR	80	WGKGTTTVTVVSS

FIG. 4B

Framework Regions, Light Chain

SEQ ID NO:	FR1	SEQ ID NO:	FR2
81	PDSLAVSLGERATINC	88	WYQQKPGQPPKLLIY
82	PSFLSASVGDRTITC	89	WYQLKPGKAPKLLIY
83	PGTSLSPGERATLSC	90	WYQQKPGQAPRLLIY
84	PDSLAVSLGERATINC	91	WYQQKPGQPPKLLIY
85	PGTSLSPGEGATLSC	92	WYQQRPQGQAPRLLIY
86	PGTSLSPGEGATLSC	93	WYQQKPGQAPRLLIY
87	PGTSLSPGERVTLSC	94	WYQQKPGQAPRLLIY
SEQ ID NO:	FR3	SEQ ID NO:	FR4
95	GVPDRFSGSGGTDFTLTISSLQAEDVAVYYC	102	FGQGTKLEIKRTVA
96	GVPSRFSGSGGTDFTLTISSLQPEDFATYYC	103	FGGGAKEIGRRRTVA
97	GIPDRFSGSGGTDFTLTISRLEPEDFAVYYC	104	FGQGTKVEIKRTVA
98	GVPDRFSGSGGTDFTLTISSLQAEDVAVYYC	105	FGQGTKLEIKRTVA
99	GIPDRFSGSGGTDFSTISLQPEDTGTYYC	106	FGQGTRLEIKRTVA
100	GIPDRFSGSGGTDFTLTISRLEPEDFAVYYC	107	FGQGTRLEIKRTVA
101	GIPDRFSGSGGTDFTLTISRLEPEDFAVYYC	108	FGQGTKVEIKRTVA

**FIG. 4B Cont'd**

12/21

LIGHT CHAIN NUCLEOTIDE SEQUENCE OF ANTI-GPI ANTIBODIES

A4 - SEQ ID NO:112

CCAGACTCCCTGGCTGTCTCTGGCGGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTTACACTTCCACAATAA  
GAACTACTTAGCTTGGTACAGCAGAAACAGGCCAGCCTCCTAAAGTTGCTCATTTACTGGGCATCCACCCGGGAATCCGGGGTCC  
CTGACCGATTTCAGTGGCAGCGGGTCTGGGACAGATTTCACCTCACCATCAGCAGCCTGCAGGCCTGAAGAATGTGGCAGTTTATTAC  
TGTCAGCAATATTATGATTCTGTACACTTTTGGCCAGGGGACCAAGCTGGAGATCAACGAACTGTGGCT

D2 - SEQ ID NO:113

CCATCCTTCTGTCTGTAGGAGACAGAGTCACCATCATTGCCGGGCCAGTCAAGGCCATTAGCAGTTATTAGCCTGGTAT  
CAGCTAAACCGGGGAAAGCCCTAAGCTCCTGATCTATGCTGCATCCACTTTGCAAAAGTGGGTCCCATCAAGGTTTCAGCGGCAG  
TGGATCTGGGACAGAAATTCACCTCTCACAATAAGCAGCCTGCAGCCTGAAGATTTTGCAACTTATTACTGTCAACAGCTTAATAGTT  
ACCTCTCACTTTCGGCGGAGGGGCCAAGGTGGGATCAGACGAACTGTGGCT

D121 - SEQ ID NO:114

CCAGGCACCTGTCTTTGTCTCCAGGGGAAAGAGCCACCCCTCTCCTGTCAGGGCCAGTCAGAGTGTTAGCAGCAGCTACTTAGCCTG  
GTACCCAGCAGAAACCTGGCCAGGCTCCAGGCTCCTCATCTATGTGTCATCCAGCAGGGCCACTGGCATCCAGACAGGTTTCAGTG  
GCAGTGGGTCTGGGACAGACTTCACCTCACCATCAGCAGACTGGAGCCTGAAGATTTTGCAGTGTATTACTGTCAGCAGTATGGT  
AG CTCACCTCGGACGTTCTGGCCAAAGGACCAGGTGGAAATCAACGAACTGTGGCT

B2 - SEQ ID NO:115

CCAGACTCCCTGGCTGTCTCTGGCGGAGAGGGCCACCATCAACTGCAAGTCCAGCCAGAGTGTTTTACACTTCCACAATAA  
GAACTACTTAGCTTGGTACCAGCAGAAACAGGCCAGCCTCCTAAGTTGCTCATTTACTGGGCATCCACCCGGGAATCCGGGGTCC  
CTGACCGATTTCAGTGGCAGCGGGTCTGGGACAGATTTCACCTCACCATCAGCAGCCTGCAGGCTGAAGATGTGGCAGTTTATTAC  
TGTCAGCAATATTATGATTCTGTACACTTTTGGCCAGGGGACCAAGCTGGAGATCAAACGAACTGTGGCT

FIG. 5A

D14 - SEQ ID NO:116

CCAGGCACCCCTGTCTCCAGGGGAAGGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAGCAGCAGCTACCTAGCCTG  
GTATCAGCAGAGACCTGGCCAGGCTCCAGGCTCCTCATCTATGGTGCAATCCAGCAGGGCCACCGGCATCCCAGACAGATTTCAGTG  
GAAGTGGATCTGGGACAGATTTCAGTTTCACCATCAGCAGTCTGCAGCCTGAAGATACTGGGACATATTACTGTCAACAATATGAT  
AATGTCCCTGACACTTTTGGCCAGGGGACCAGGCTGGAGATCAACGAACCTGTGGCT

D5 - SEQ ID NO:117

CCAGGCACCCCTGTCTTGTCTCCAGGGGAAGGAGCCACCCTCTCCTGCAGGGCCAGTCAGAGTGTTAGCAGCAGCTACTTAGCCTG  
GTACCAAGCAGAAACCTGGCCAGGCTCCAGGCTCCTCATCTATGGTGCAATCCAGTAGGGCCACTGGCATCCCAGACAGGTTTCAGTG  
GCAGTGGTCTGGGACAGACTTCACTCTCACTCACCATCAGCAGACTGGAGCCTGAAGATTGTGCAGTGTATTACTGTTCAGCAGTATGGT  
ACCTCACCCCTCTTGGCCAAAGGGACACGACTGGAGATTAAACGAACCTGTGGCT

A7 - SEQ ID NO:118

CCAGGCACCCCTGTCTTGTCTCCAGGGGAAGAGTCACCTCTCTCCIGCAGGGCCAGTCAGAGTGTTAGCAGCAGTTACTTAGCCTG  
GTACCAAGCAGAAACCTGGCCAGGCTCCAGGCTCCTCATCTATGGTGCAATCCAGCAGGGCCACTGGCATCCCAGACAGGTTTCAGTG  
GCAGTGGTCTGGGACAGACTTCACTCTCACCATCAGCAGACTGGAGCCTGAAGACTTTGCAGTTTATTACTGTTCAGCAGTATGGA  
AGCTCACCTCGGACGTTCTGGCCAAAGGGACCAAGGTGGAAATCAACGAACCTGTGGCT

FIG. 5A Cont'd

14/21

HEAVY CHAIN NUCLEOTIDE SEQUENCE OF ANTI-GPI ANTIBODIES

A4-H - SEQ ID NO:116

GAGGCGTGGTCCAGCCTGGGAGGTCCCTGAACCTCTCCTGTGCAGCCCTCTGGATTCAATTCAGTAGTCATGGCTCGCACTGGGTC  
CGCCAAAGCTCCAGGCAAGGGGCTGGAGTGGGTGGCACCTTTTGTCTGATGGAAGTAAATAATTCTATATAGAAATCCGTGAAGG  
GCCGATTCACCATCTCCAGGACAAATCTAAGAAACACACTGTATCTGCAATGAACAGCCTGAGAAATTGACGACACGGCTGTCTAT  
TACTGTGCGATTTCCCTGGTGGGAACCTACCGCTTTTAACTACTGGGGCCAGGGAACCCCTGGTCAACCGTCTCCTCA

D2-H - SEQ ID NO:117

GGCGTGGTCCAAAGCATGGAGGTCCCTAAGACTCTCCTGTAGCCTGTGGATTACCTTCAGTAGTCATACCATGCACTGGGTCCG  
CCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCACTTATATTTCTATGATGGAAGTAAATAACTATGCAGACTCCGTGAAGGC  
CGATTCAACCATCTCCAGAGACAAATCCAAAGAACACGCTGTATCTGCAATTGAGCAGCCTAAGACCTGAGGACACGGCTGTCTATTA  
TTGTACGAAATTCGAGGTGGGAGCTACCGCTTTTGTACTACTGGGGCCAGGGAACCCCTGGTCAACCGTCTCCTCAG

D121-H - SEQ ID NO:118

GGGGAGGCGTGTCCAGCCTGGGAGGTCCCTGAGACTTTTCCCTGTGCAGCCTCTGGATTCACTTCAGTTCCTATACTTTCCACTGG  
GTCCGCCAGGCTCCAGGCAAGGGGCTGGAGTGGGTGGCAGTTATATCATATGATGGAACAAGAAATACTACGCAGACTCCGTGA  
AGGGCCGATTACCATCTCCAGAGACAAATCCAAAGAACACTCTATATCTGCAAAATGAACAGCCTGAGAGTTGAGGACACGGCTGT  
TATTACTGTGCGATTTCCATAGTGGGAACCTACCGCTTTTAACTACTGGGGCCAGGGAACCCCTGGTCAACCGTCTCCTC

FIG. 5B

B2-H - SEQ ID NO:119

GGGGCTGAGGTGAGGAAGCCCGGACCTCCGTGAGGATCTCTTGAGGGCATCTGGAAACACCTTCACTGGCCACCATAATTCACIG  
GGTCCGCCAGGCCCTGGACAAGGCCCTTCAGTGGATGGGAAGATCAACCCGACTGGCGGCGTTAGTCTCGCACAGAGTTTC  
CAGGACAGAGTCAGCCTGACCCAGGACAGGTCGTCCAATACAGTCTCTTGAACTGAGCGGCTCACGGAGGAGGACACGGCCT  
TATAATTCTGTGCGAGGCCCGATTTAACATGATCCGGGAACCTCTTGACCTCTGGGGCCAGGGGACAGTGGTCAACCGTCTCTCTCA

D14-H - SEQ ID NO:120

GGGGGAGGCTTGGTACAGCCTGGGGGTTCCCTGAGACTCTCCTGTGCAACCTCTGGATTTCATCTTTAACAGCTATGCCATGAACCTG  
GGTCCGCCAGGCTCCAGGGAAGGGCTTGAGTGGTCTCACGTAATTAGTGGAAATAGTGGAAACACATTCTACGCAGACTCCGTG  
AAGGGCCGTTCAACCATCTCCAGAGACAAATCCAAAGAACACGGCGTTTCTGCGAATGAACAGCCAGAGAGCCGAAGACACGGCCG  
TTTATTACTGTGGAAAGATCTGTCTCGAGTGGTGCATACTACTACGGGATGGACGTCTGGGGCCAAAGGACCAACGGTCAACCGTC  
TCCTCA

D5-H - SEQ ID NO:121

GGCCAGGATTGGTGAGGCCATCACAGACCCTATCCCTCACCTGCACCTGTCTCTCCAGGCTCCATTAAAGGTGATAGTTACTTCTGG  
AGCTGGGTCCGTCAGCCCGTAGGGAAGGACTGGAGTGGATAGGGCGTATCTACGGCAGAGGGACTACCAATTACAACCGTGT  
TCGGGAGTCGAGTCAGTATGTCAGTGGACATGTCCAGGAGTCAGTTTCTTGGAATTGAGAGATGTGACCCCGCAGACACGGCC  
GTCTATTACTGTGCGAGAGACAAGGGGTCCGAATACTCCTACITTGACCCCTGGGGCCAGGGAATAGTGGTCAACGTCTCTCTCA

FIG. 5B Cont'd

A7-H - SEQ ID NO:122

GGGCTGAGGTGAAGAAGCCTGGGTCCCTCGGTGAAGTCTCCTGCAGGGCTTCTGGAGGCACATTTCAGCAGATATGCTA  
TCAGCTGGGTGCGACAGGCCCTGGACAAGGGCTTGAGTGGATGGAGGGATCATCCCTCCCTTTGGTCCAGTAAACT  
ACGCACAGAAGTTCCAGGGCAGAGTCACGATTACCGCGGACGATTCCACGAAACACAGCCTACATGGGCTCTGAGCAGCC  
TGAGATCTGGGGACACGGCCGTGTATTACTGCGCGAGAGTGGCCTATGATGGTATTAACAACAATATCCCAA  
AGATCTACTACTCCTACATGGACGTCTGGGGCAAGGGACCACGGTCACCGTGTCTCCTCAGC

**FIG. 5B Cont'd**



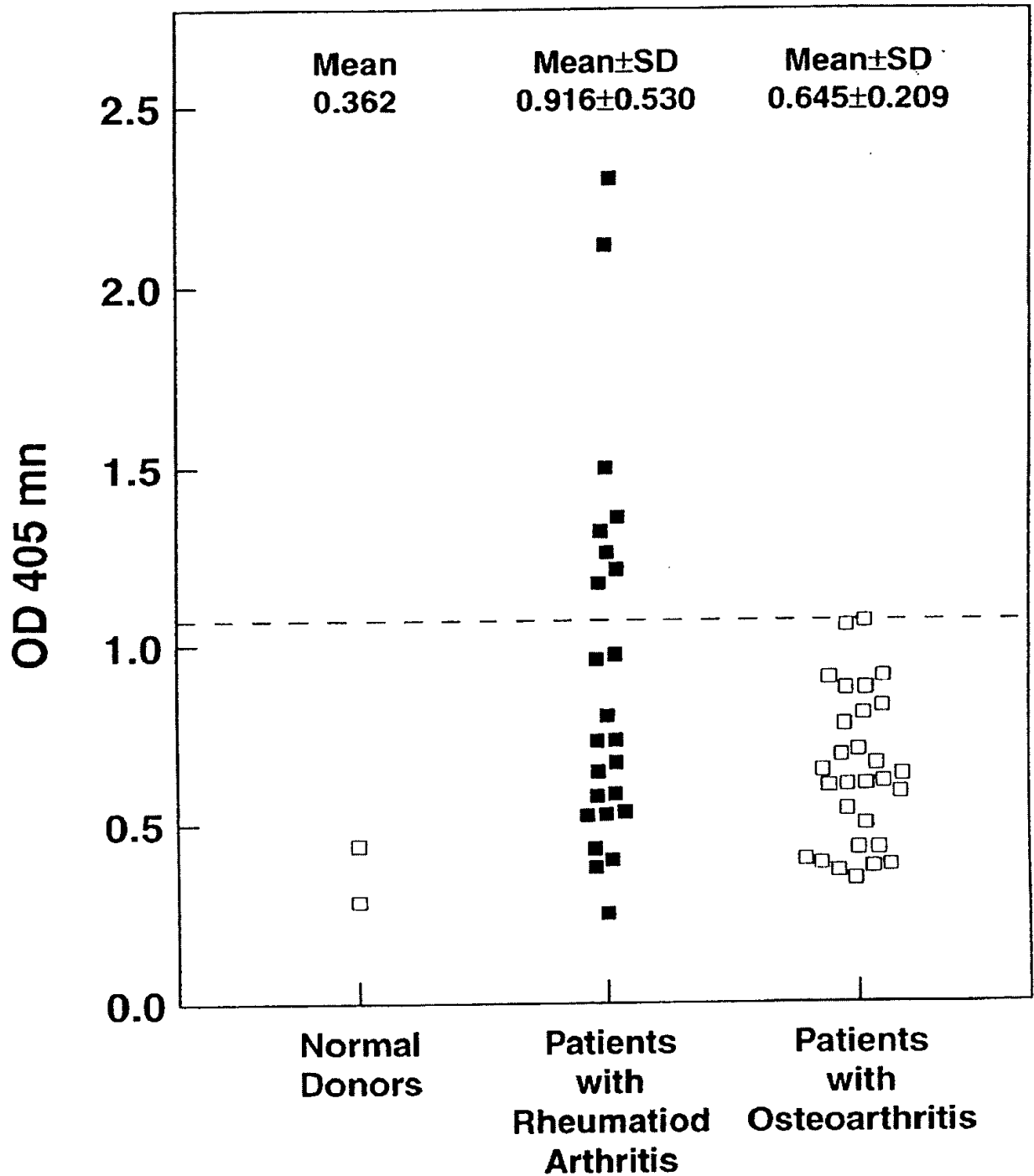


FIG. 6

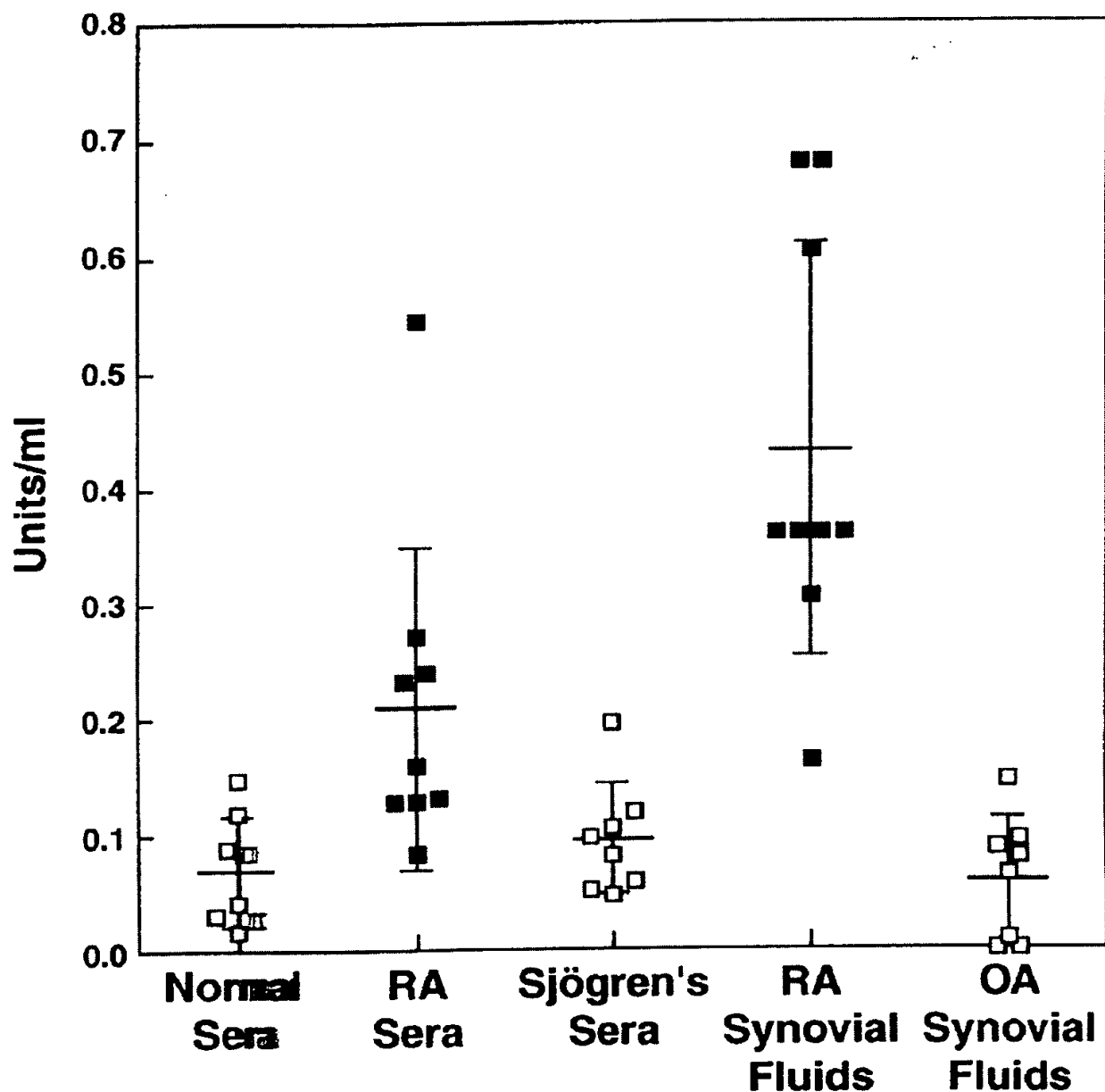


FIG. 7

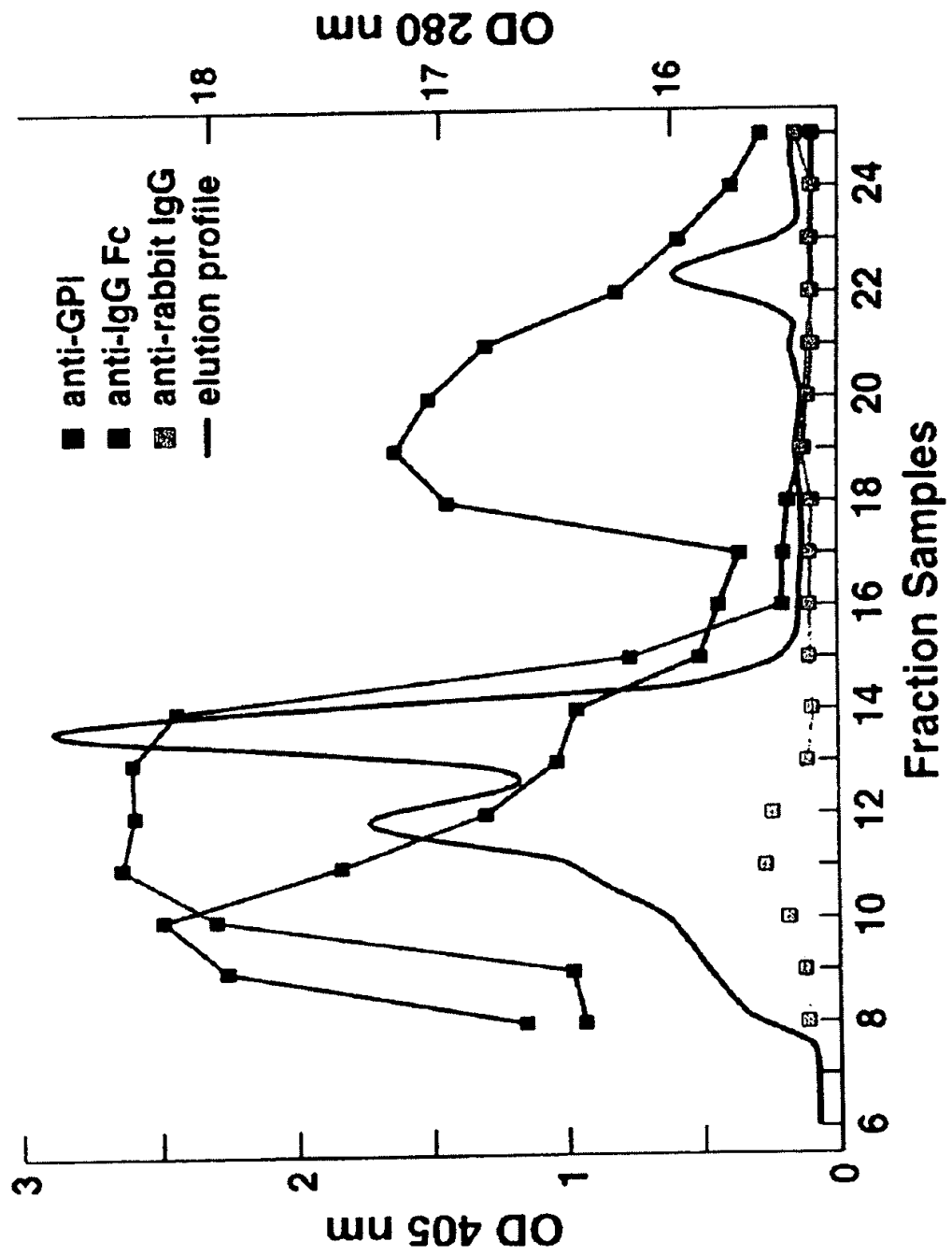


FIG. 8A

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR  
 PARTICIPATION IN AUTOIMMUNE DISEASE  
 INVENTORS NAME: Henrik Ditzel et al.  
 SERIAL NO.: 09/828,708  
 20/21



FIG. 8B



FIG. 8C

09828708.021102

TITLE: AUTOANTIBODIES TO GLUCOSE-6-PHOSPHATE ISOMERASE AND THEIR  
PARTICIPATION IN AUTOIMMUNE DISEASE  
INVENTORS NAME: Henrik Ditzel et al.  
SERIAL NO.: 09/828,708  
21/21

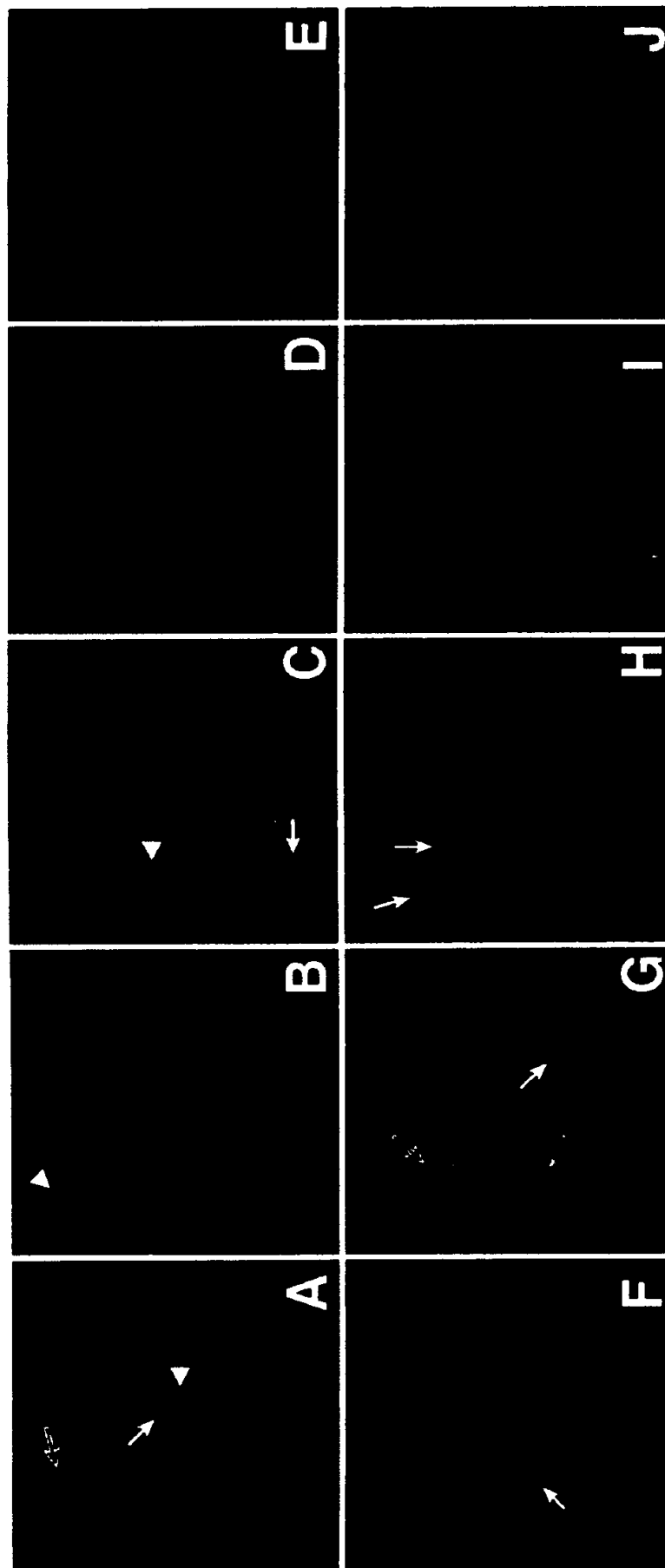


FIG. 9

2011-02-20 10:28:28